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MIPR NUMBER: 94MM4530

TITLE: Human Mammary Cell Resource

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REPORT DATE: 20 Apr 95

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release;
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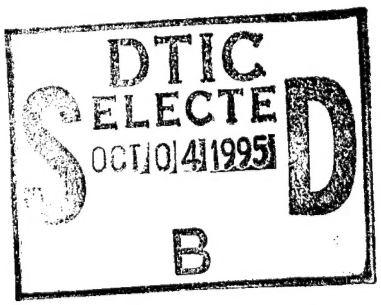

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	4/20/95	Annual 15 Mar 94 - 31 Mar 95

4. TITLE AND SUBTITLE
Human Mammary Cell Resource

5. FUNDING NUMBERS
94MM4530

6. AUTHOR(S)
Dr. Martha Stampfer

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Lawrence Berkeley Laboratory
Berkeley, California 94720

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release, distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

My laboratory has generated a human mammary epithelial system for studies on normal and aberrant growth control mechanism. Part of the goal of this work has been to facilitate widespread use of human breast cells for molecular and biochemical studies. Large quantities of well-characterized normal, immortal, and malignantly transformed cell populations have been generated. We have provided cells and cell culture expertise to over 100 other laboratories

The widespread usage of these many HMEC types necessitated development in 1987 of an appropriate database for information storage and retrieval. The purpose of this grant is to upgrade and expand the features of this database, and to ensure that all computer and written records can be readily understandable to others besides the PI. Additionally, in order to foster rapid, cooperative communication among the groups using HMEC, this grant supports setting up and E-Mail network amoung laboratories using HMEC.

In the past year we have made extensive revisions to upgrade our Database. This work is proceeding as planned. We have recently begun the work to set up E-mail network.

14. SUBJECT TERMS
Human Mammary Epithelial, E-Mail network, 4th Dimension

15. NUMBER OF PAGES
10

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

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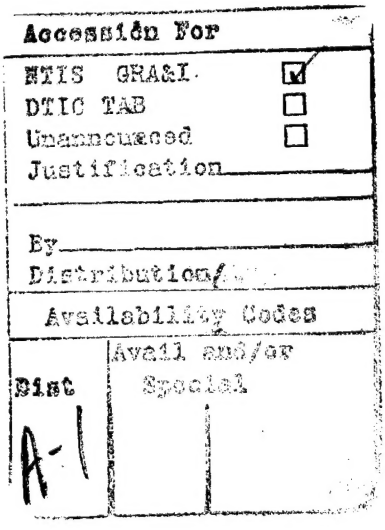

PI - Signature Date 4/20/95

INTRODUCTION

My laboratory's research program has centered on the development and utilization of human mammary epithelial cell (HMEC) cultures. The overall goal of this work has been to generate a human epithelial cell system for studies on the normal mechanisms controlling proliferation and differentiation in human cells, and on how these normal processes may become altered as a result of immortal and malignant transformation. Included in this goal has been the desire to facilitate widespread use of human epithelial cells for molecular and biochemical studies. Therefore, we have endeavored to develop a system that is relatively easy to use, and can provide large quantities of well-characterized, uniform cell populations. We have provided cells and cell culture expertise to over 100 other laboratories.

During the past 17 years, we developed an HMEC bank which contains the following types of material: (1) primary cells (frozen as epithelial organoids or cell clumps) from reduction mammoplasties, tumors, non-tumor mastectomy tissue, benign tumors, and gynecomastias from nearly 200 individuals; (2) higher passage pools of single cells from the above tissue types ; (3) cells from reduction mammoplasty specimens that have been exposed to benzo(a)pyrene and have acquired extended life in culture; (4) the immortally transformed 184A1 and 184B5 cell lines, spontaneous and carcinogen induced variants of these lines; (5) malignantly transformed derivatives of 184A1 and 184B5.

The widespread usage of these many HMEC types necessitated development of an appropriate database for information storage and retrieval. A 4th Dimension Database was developed in 1987. The purpose of this grant is to upgrade and expand the features of this database, and to ensure that all computer and written records can be readily understandable to others besides the PI. Additionally, in order to foster rapid, cooperative communication among the groups using HMEC, this grant supports setting up an E-mail network among laboratories using HMEC.

BODY

In the first year of this grant we have accomplished most of our goals for Year One. The PI has worked with a computer programmer to upgrade and modify the 4th Dimension Database used for our HMEC inventory. Specifically, the following has been done:

Upgrades and Modifications to the 4th Dimension Database

The following major changes have been made in the Database:

1. Upgrade program to 4th Dimension version 3.1
2. Run diagnostic and clean-up the over 100 bugs found. This required rewriting most procedures, modularizing the code.
3. Redo the locations function
    a. Enable frozen ampoule inventory and location management from one custom window so that ampoules can easily be entered and removed from one menu screen (see figure 1).
    b. Add function to allow ready identification of all empty freezer spaces, including contiguous empty spots of any number (see figure 2).
    c. Increase relational information on location functions onto printouts of inventory function
        i. Automatically change inventory fields to show location of actual number of ampoules remaining (rather than only the location of original total)
        ii. Automatically change inventory information on test ampoule when it is removed to indicate that the test ampoule has been used.
        iii. Print in italics all freezedowns for which no ampoules remain so that they can be readily identified.
4. Change the search function program and create new search modules
    a. Enable easy automatic search for predefined categories (as defined by the PI) of cell types without use of Search Editor (see figure 3). This now allows members of the lab to readily find what cells are available.
    b. Enable easy programming of predefined search categories and order of printing ampoule inventory from the Custom Search menu (rather than using the programming functions in the User mode) so that the PI can easily maintain the search categories (see figure 4).
    c. Add new "History" category correlating with the predefined search categories so that the history of generation and experimentation of the cells in that "Search" category can be entered into the computer.

5. Program documentation draft by the programmer (see figure 1).
6. Minor changes in layout have been done.

Setting up an Email network

We have just begun work on the second aspect of this project, i.e., setting up an E-mail communication network for users of human mammary epithelial cell cultures. This aspect has been delayed due to the delay in having our off-campus building connected directly to the Internet. This was finally accomplished in April. The PI is now beginning to collect information from the mammary cell users and work with the computer personnel at LBL to create a user network bulletin board. We have purchased a gigabyte hard disk for information storage.

Entering old records into the database and checking freezer inventories.

The work on entering old records and checking freezer inventories was stated to be accomplished by a work-study student, as the most-cost efficient method of doing this unskilled labor. The same work-study student was stated to help set-up and maintain the Email network. Since setting up the Email network was delayed by circumstances beyond our control, it made no sense to hire a work-study student just for this unskilled aspect of the project. The most efficient choice was to wait to hire the student until we could start on the Email network simultaneously.

This aspect of the project was only listed as Year One since it was anticipated that the work on setting up the Email network would begin in Year One. There is no independent reason why this work needed to be done in Year One. Nothing else in this grant is contingent upon its completion. It is anticipated that the entry of old records can be readily accomplished by the now-hired work-study student spending 1-2hrs/week for 2-3 months.

In reference to comments made on the review of the previous annual report, the "updating of written records" (Task 2 of the SOW) was not listed as a task for Year One and is therefore not behind schedule.

CONCLUSIONS

The work has been proceeding largely as planned, except for the delay in getting the Internet hookup. The improvements in the Database structure have been most helpful for easing use for both the PI and others in the lab. In the coming year the PI is planning to begin entering information on cell histories into the database, and organizing the filing of written data on the cell histories. We also plan on having a usable bulletin board set up within the coming year.

ABSTRACT

My laboratory has generated a human mammary epithelial cell system for studies on normal and aberrant growth control mechanism. Part of the goal of this work has been to facilitate widespread use of human breast cells for molecular and biochemical studies. Large quantities of well-characterized normal, immortal, and malignantly transformed cell populations have been generated. We have provided cells and cell culture expertise to over 100 other laboratories.

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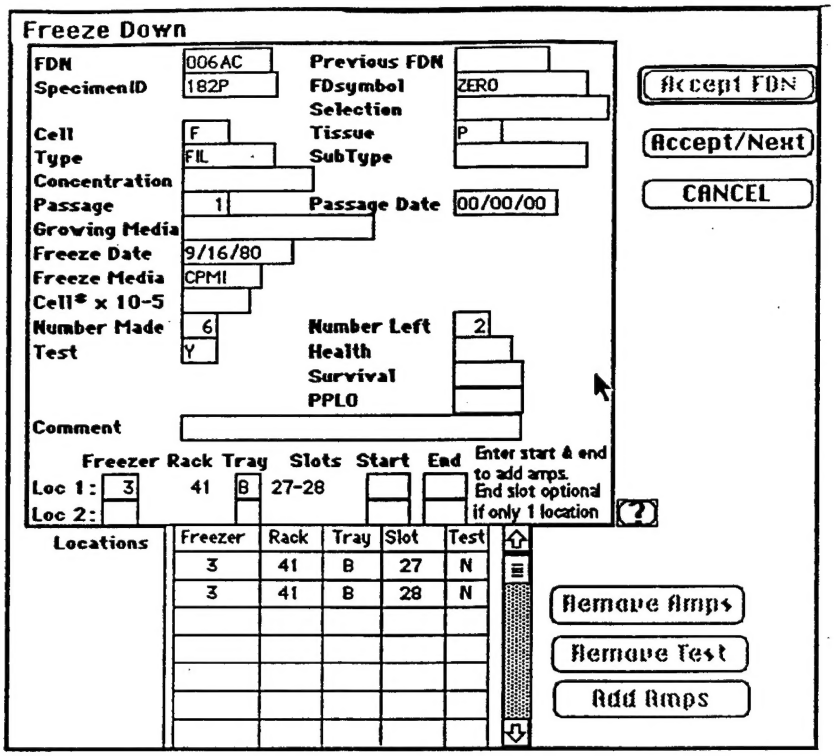
In the past year we have made extensive revisions to upgrade our Database. This work is proceeding as planned. We have recently begun the work to set up an E-mail network.

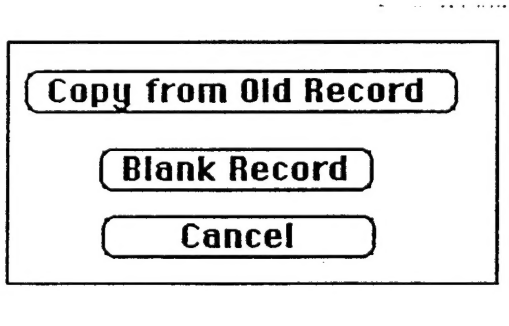
Figure 1



Press the Accept/Next or Cancel button to finish with this record.

FAInvent menu: Add FAInvent records

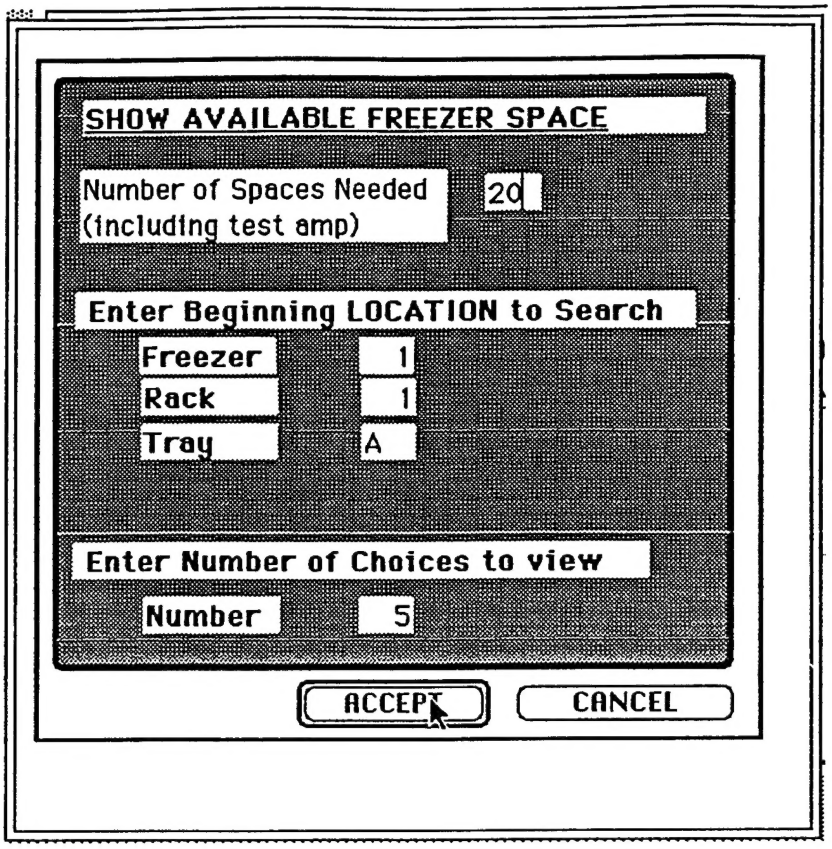
Add records by selecting Add FAInvent Records from the FAInvent menu. You then are presented with the choice to copy from an existing (old) record or to start with a new, blank record. (Or, of course, to cancel.)



If you choose to start with a blank, you are presented with a blank record to edit.

If you choose to work from a Copy, you enter the FDN of the record to use as template.

Figure 2: Empty Freezer Space



Results display with the option to print and/or view more:

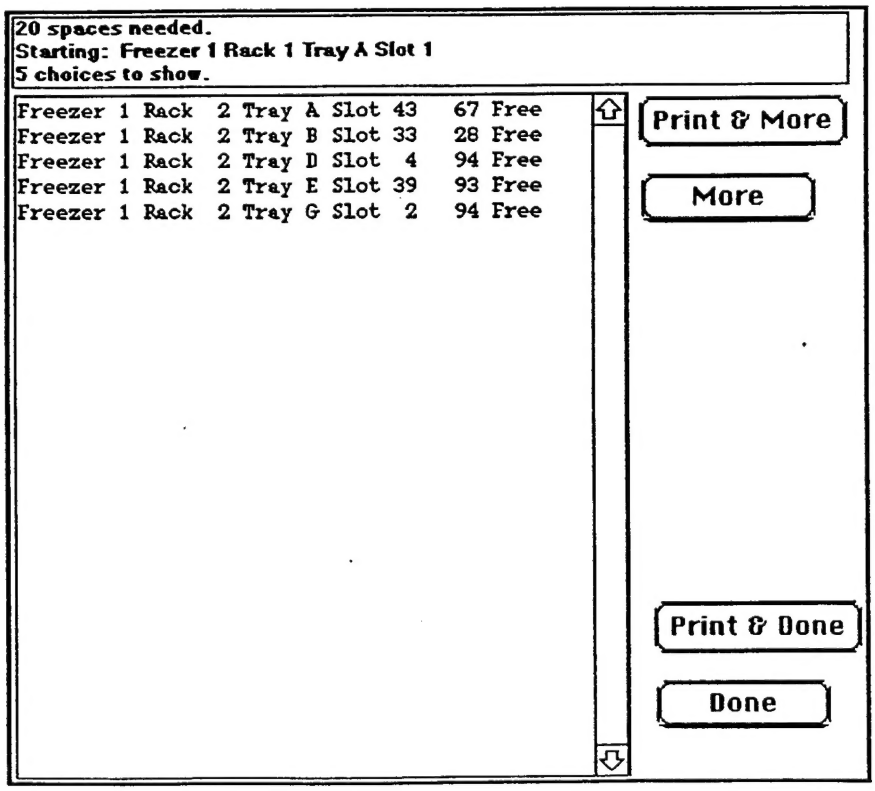
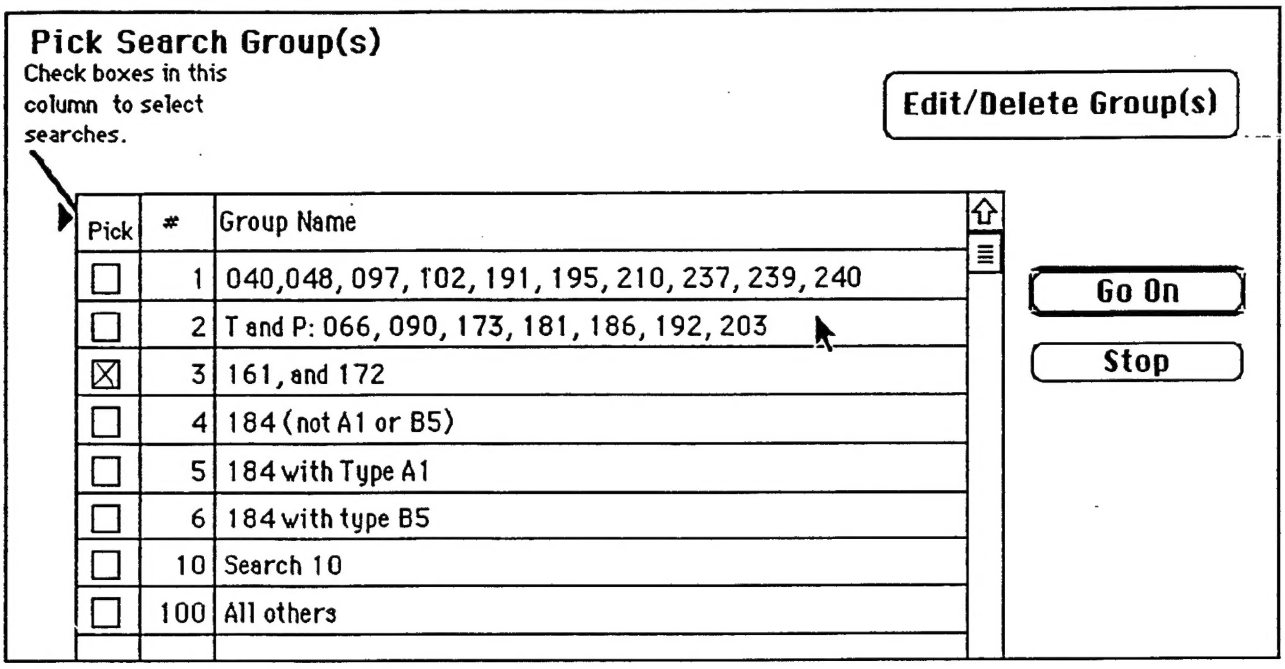


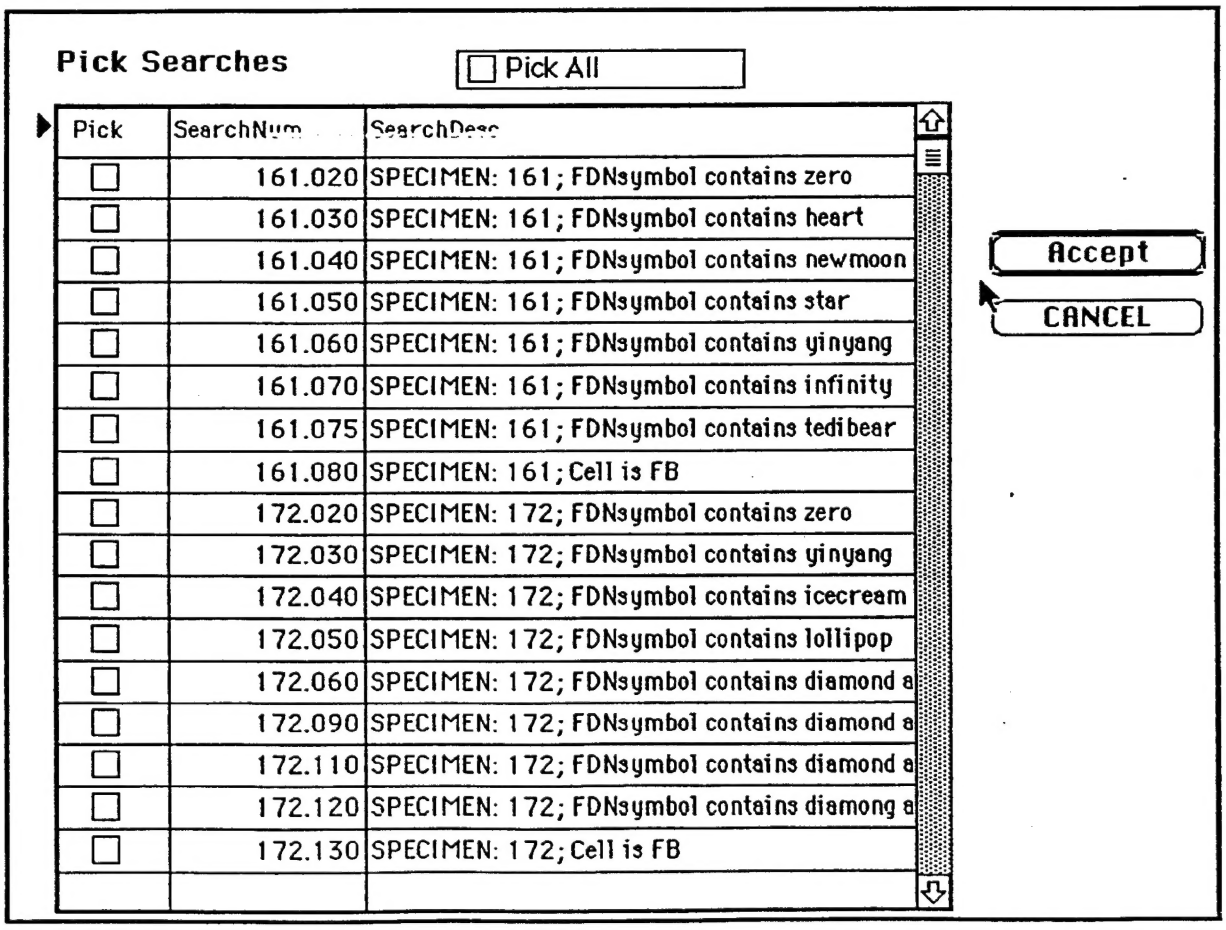
Figure 3: New Search Modules

Using a pre-defined search:

Pick one or more search groups by clicking on the left-hand side box of the group list.

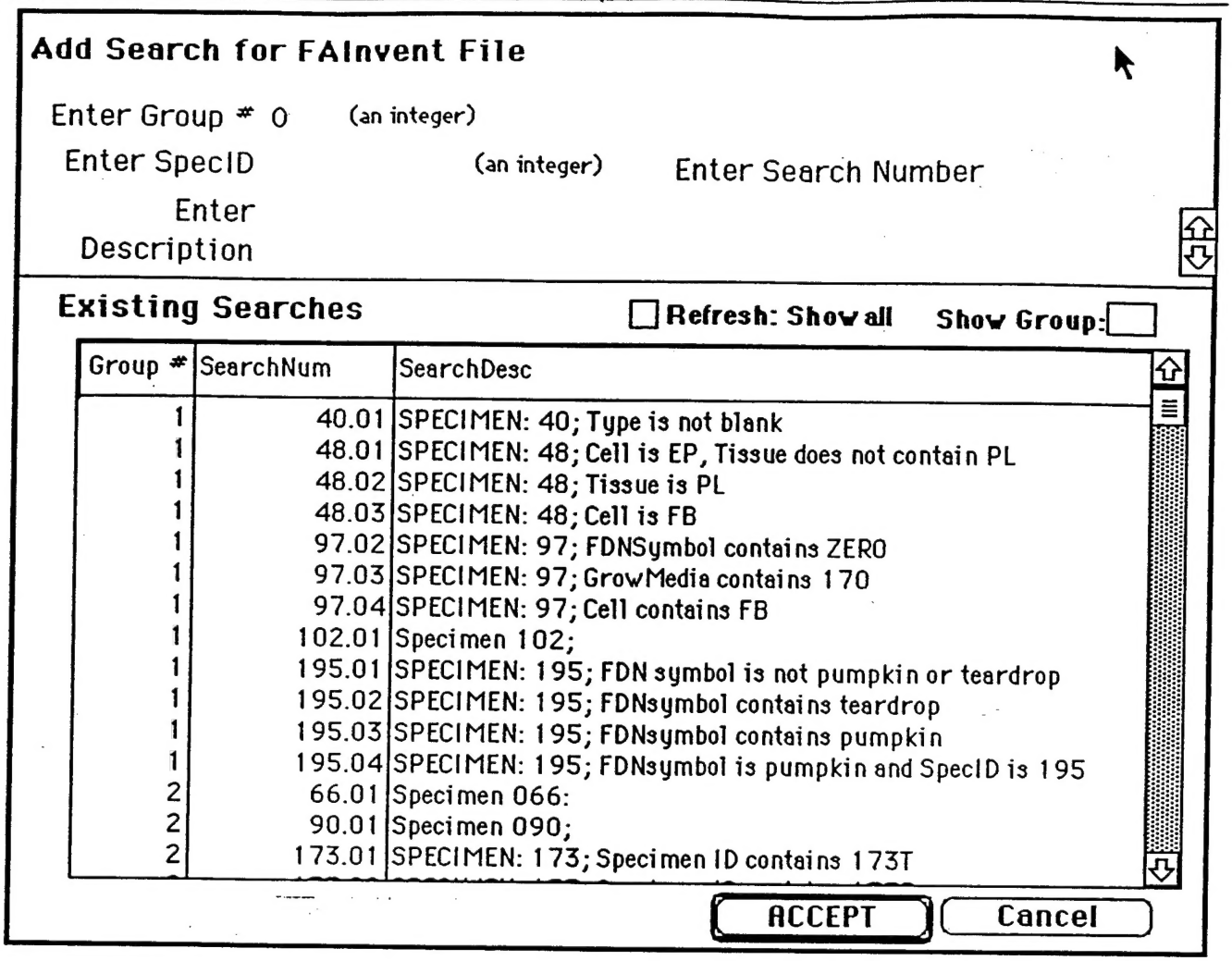


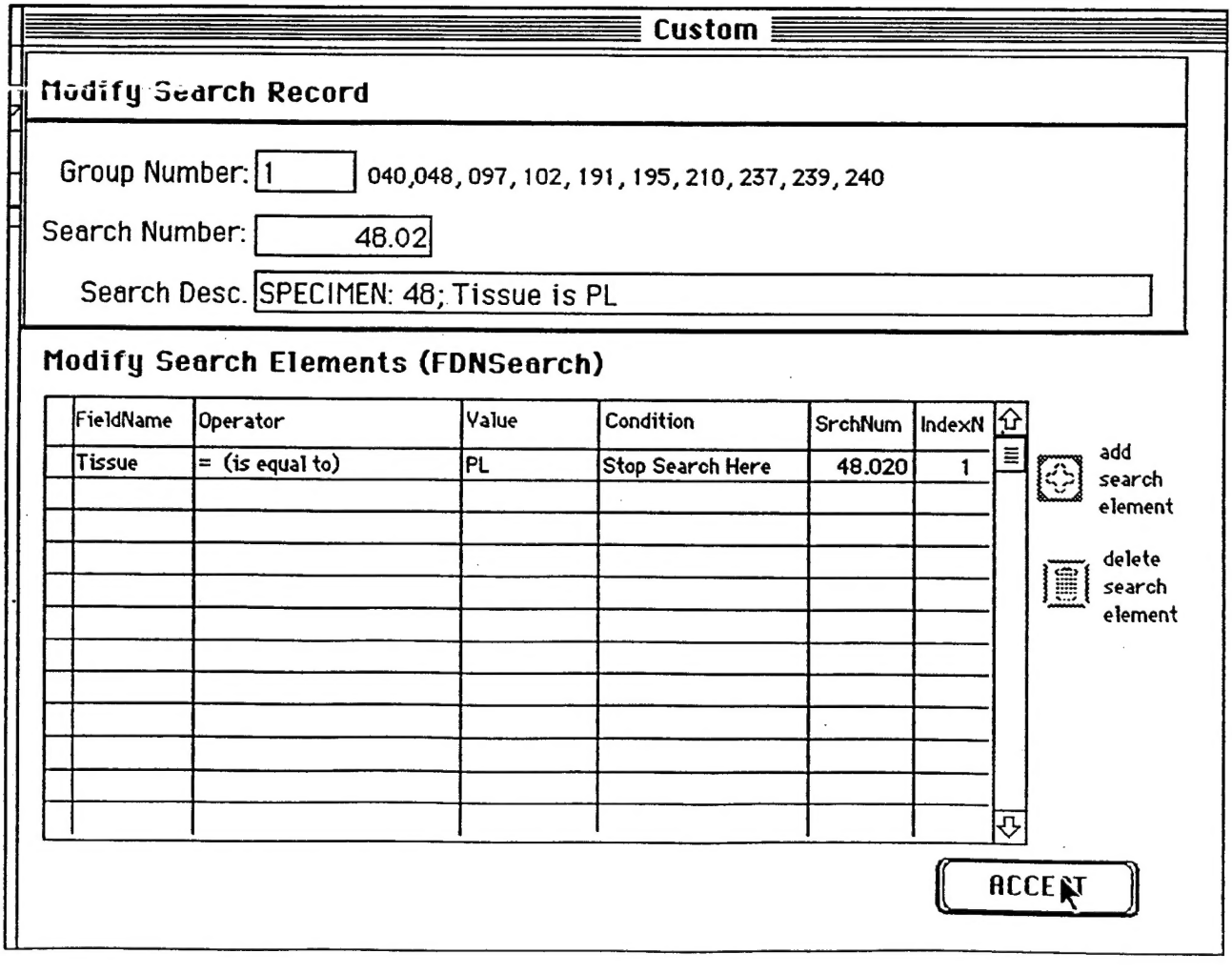
Then pick one or more searches from each group or pick them all.



Then you will be prompted about whether to show on screen or print as described above.

Figure 4


Add Search for FAInvent File
Enter Group # 0
(an integer)
Enter SpecID
(an integer)
Enter Search Number
Enter Description
Existing Searches
Refresh: Show all
Show Group:
Group # | SearchNum | SearchDesc
1 | 40.01 | SPECIMEN: 40; Type is not blank
1 | 48.01 | SPECIMEN: 48; Cell is EP, Tissue does not contain PL
1 | 48.02 | SPECIMEN: 48; Tissue is PL
1 | 48.03 | SPECIMEN: 48; Cell is FB
1 | 97.02 | SPECIMEN: 97; FDNSymbol contains ZERO
1 | 97.03 | SPECIMEN: 97; GrowMedia contains 170
1 | 97.04 | SPECIMEN: 97; Cell contains FB
1 | 102.01 | Specimen 102;
1 | 195.01 | SPECIMEN: 195; FDN symbol is not pumpkin or teardrop
1 | 195.02 | SPECIMEN: 195; FDNsymbol contains teardrop
1 | 195.03 | SPECIMEN: 195; FDNsymbol contains pumpkin
1 | 195.04 | SPECIMEN: 195; FDNsymbol is pumpkin and SpecID is 195
2 | 66.01 | Specimen 066:
2 | 90.01 | Specimen 090;
2 | 173.01 | SPECIMEN: 173; Specimen ID contains 173T
ACCEPT
Cancel


Custom
Modify Search Record
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Modify Search Elements (FDNSearch)
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Tissue | = (is equal to) | PL | Stop Search Here | 48.020 | 1
add search element
delete search element
ACCEPT